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ning of each regular issue of the PCT Gazette.*

(54) Title: ASSAYS FOR THE DIRECT MEASUREMENT OF GENE DOSAGE

(57) Abstract: The present invention relates to compositions, methods, and kits for quantifying variations in gene copy number, e.g., of individual genes or of chromosomes or portions of chromosomes in an homogeneous reaction, without the need for target amplification, fragment size resolution, or microscopy.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/22014

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) : C12Q 1/68; C12P 19/34; C07H 21/04 US CL : 435/6, 91.21 536/23.1, 24.3 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 435/6, 91.21 536/23.1, 24.3 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data bases consulted during the international search (name of data base and, where practicable, search terms used) Eas, Medline		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category -	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 5,888,740 (HAN) 30 March 1999 (30.03.1999)	1-3, 5 4
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
Special categories of cited documents:		
"A" documents defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent published on or after the international filing date "L" documents which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" documents referring to an oral disclosure, use, exhibition or other means "P" documents published prior to the international filing date but later than the priority date claimed	"X" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "Y" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "V" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "Z" document member of the same patent family	
Date of the actual completion of the international search	Date of mailing of the international search report	
05 February 2006 (05.02.2006)	24 FEB 2006	
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer Gary Jones Telephone No. (571) 272-0500	

Form PCT/ISA/210 (second sheet) (April 2005)

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/22014

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of any additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-5

- Remark on Protest
- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
 - ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
 - ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
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BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

Group I, claim(s) 1-5, drawn to a method for selecting a chromosome-specific sequence.

Group II, claim(s) 6-16, drawn to a method of detecting aneuploidy of a chromosome in a subject.

Group III, claim(s) 17-23, drawn to a kit comprising oligonucleotides for detecting at least one exon.

The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The inventions of Groups I-III are related to one another through oligonucleotides that allow for the detection of exons in a target sequence. U.S. Patent 5,474,796 (Brennan) discloses arrays of oligonucleotides that can be used in assays. As set forth in column 9, the array can comprise all possible 10-mers. Accordingly, the array of Brennan has as an inherent property oligonucleotides that will allow for the detection of any and all possible exons of interest in any target sequence. Given that the oligonucleotides were known in the art prior to the priority date of the instant application, the inventions of Groups I-III are not linked by a special technical feature so as to have unity of invention.

It is noted that the lack of unity mailed 19 Sept. 2005 included claims 13-16 in group I however this was an error as claims 13-16 read only on group II and therefore have not been examined in this search report.